

# The Comparison of the Minimum Data Set for Elderly Health in Selected Countries

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## ABSTRACT

**Introduction:** Ongoing increase in the elderly population in many developed countries has drawn attention to health of this age group. Recording adequate and relevant data for the elderly is considered as the basis for future planning for this segment of society. So this study was conducted to compare minimum data about elderly health in selected countries. **Methods:** This review study was conducted through Internet and library studies. Key words were extracted from search engines and data bases including Google, Yahoo, Google Scholar, PubMed, ProQuest and Iranian National Medical Digital Library. Inclusion criteria included English language with no time limits. All articles, research projects, theses, guidelines and progress reports were retrieved from the United States, Sweden, Japan and Iran and reviewed. Also, websites of organizations responsible for elderly health in selected countries were visited and their documents were reviewed. Results from this search were provided narratively and finally were presented within comparison tables. **Findings:** The findings of this study showed that elderly data in the selected countries are collected around four axis including minimum demographic data, medical histories, health assessment and financial data of elderly health. **Discussion and Conclusion:** Given the importance of the minimum data set of elderly health for future planning, the use of experiences of leading countries in elderly health seems necessary; however, localization of it according to the country's needs is inevitable.

**Key words:** Minimum data set, health, elderly.

## 1. INTRODUCTION

Information is considered as a valuable source for managers (1). However, experience has shown that managers receive data more than the time they spend. In other words, managers suffer information overload, so that they have to spend a lot of time to separate relevant from irrelevant information and to find main issues among information (2).

Increasing size and complexity in most organizations have caused that managers are increasingly distant from operations, and this increases their need for information about changes occurred in organization, so the growing importance of management information systems in the areas of planning and decision-making is seen accordingly (3-7).

Healthcare organizations are no exception because information managers in the healthcare system encounter collecting large volume of data (8-10).

Studies have shown that lack of ac-

cess to real and timely data at time of decision making by managers is one of challenges of healthcare centers (11-15). Even, sometimes this issue has affected future planning and national policies of countries (6, 7, 15). Also, some studies mention diversity of services and complexity of environment as other important challenges of healthcare centers; so in such a complex environment, the existence of a system to control environment and increase efficiency and effectiveness is considered as an inevitable necessity (9, 10, 16-20).

Ongoing increase in the elderly population in many developed countries has drawn attention to health of this age group. The speed of these demographic changes in developing countries is more perceptible. Accordingly, nowadays an ongoing need to provide healthcare for elderly population is perceived. In today's world, a demographic revolution is taking place because there are about 600 million elderly people

aged 60 years and over in the world and this figure will double by 2025 (21, 22).

According to the definition by the World Health Organization, a country is considered as an aging country if the age group over 65 years is between four and seven percent, and if this age group is between 14 and 20 percent of population, this country is considered as an aged country (23). In a world that is rapidly aging, elderly people will play an increasingly important role in doing voluntary activities, transferring experience and knowledge and helping family members through caring role. Most of developing countries in the world have perceived socioeconomic and health related complexities resulting from population transition called “aging nations”; however, given the progressive growth of the elderly population, their problems also have increased so that a satisfactory solution has not been found yet for them. The progressive increase in the elderly population in many developed countries has drawn attention to health of this age group (24).

The country of Iran is no exception of the above mentioned demographic changes; so that the last census taken by Statistical Center of Iran showed that elderly people constitute 5.7% of Iran population (25). Since, according to reports from the World Health Organization, Iran will be in aging crisis until few years in the future; (23, 26, 27). Iran has sounded the alarm, however, it can be expected that the mentioned challenges are also true for service centers for elderly people because demand of elderly people for healthcare services is greater (28). According to statistics, elderly people visit the doctor five to seven times more than the rest of the society and more than 60 percent of healthcare expenditure is spent for the elderly; so appropriate data to support services provided and to improve productivity in future decision making is needed (18, 27, 29-32).

Since, minimum data set is a tool to record the most relevant and up to date facts about an individual's health and also this data set facilitates the communication between care providers and timely decision making for managers through providing a minimum level of variables related to health status of the individual including demographic, clinical, financial data, etc (33, 34) so this study aims to compare minimum data set in selected countries so that results can help researchers to design an appropriate and complete minimum data set for elderly people in Iran.

## 2. METHODS

This review study was conducted through Internet and library studies. Cases compared in this study included countries with the highest elderly population. In order to select countries, it was attempted to select countries of three continents: America, Europe and Asia; because based on the statistics, the most aged countries are on Europe and America followed by Asia. In the first step, all aged countries were extracted based on the latest results of studies (35). Age countries of America, Europe and Asia continents are presented in Table 1.

In the second step, countries with non English language articles were excluded after reviewing articles and related websites. So, Japan with the highest elderly population was selected among Asian countries. Also, Sweden was selected

Row	Country	Population over 65 (percent)
1	Monaco	26.9
2	Japan	22.9
3	Germany	20.6
4	Italy	20.3
5	Sweden	19.7
6	Greece	19.6
7	Bulgaria	18.2
8	Austria	18.2
9	Portugal	18
10	Belgium	18

Table 1 . Elderly countries in Europe and Asia (35)

Search engines and databases: Yahoo, Google, Google Scholar, PubMed, ProQuest, Iranian National Library Of Medicine (INLM)
Limits Language (only resources with at least an abstract in English)
Main phrase OR Other phrases, synonyms and variant words
Elderly OR Health OR Aging OR Elder OR Geriatrics OR Minimum Data Set OR Elderly information systems OR Aging, Elderly, Elder, MDS
AND each of the Selected Countries
United States      Sweden      Japan      Iran

Table 2. Search strategy of the comparison of the minimum data set for elderly health in selected countries

among European countries due to high elderly population and related English language articles. The United States was also selected in the America continent because it is the most aged country in this continent. In this study, the selected countries not only have the highest elderly population but also have made extensive efforts in the field of elderly health, designing and implementing health information systems and electronic health record (36). In addition, there were relevant English language articles and reports in various websites of these countries. Required data were collected through a data extraction form.

Data related to the main criteria for comparison table of studied countries were extracted through searching key words related to elderly health minimum data set and each of four selected countries in search engines and data bases including Google, Yahoo, Google Scholar, PubMed, ProQuest and Iranian National Medical Digital Library. Inclusion criteria included English language with no time limits. All articles, research projects, theses, guidelines and progress reports were retrieved and reviewed. Also, websites of organizations responsible for elderly health in selected countries were visited and their documents were reviewed. To clarify any ambiguity, email was sent to relevant organizations (in Sweden and Japan). Main keywords used in this study are presented in Table 2. Finally, after gathering data from relevant articles, findings from data extraction forms were extracted and presented as comparison tables.

## 3. RESULTS

The findings of Table 3 show that the United States, compared with other three countries, has the largest demographic data elements when providing services to the elderly people at the first visit, but in other three countries, some demographic data such as occupation, language, religion, address of elderly person and address of person accompanying patient as well as habits have not been considered.

Minimum Demographic data	Selected country			
	United States	Sweden	Japan	Iran
Name & Family Name	✓	✓	✓	✓
Record number	✓	✓	✓	✓
Date record	✓	✓	✓	✓
place of birth	✓	✓	✓	-
Date of birth	✓	✓	✓	✓
Sex	✓	✓	✓	✓
Job	✓	-	-	-
Language	✓	-	-	-
Religion	✓	-	-	-
National number	-	-	-	-
Address	✓	-	-	-
Marriage	✓	✓	✓	✓
Education	✓	✓	-	✓
Representative or guardian	✓	✓	✓	✓
Address of Representative or guardian	✓	-	-	-
Habits	✓	-	-	-

Table 3. The comparison of minimum demographic data for elderly health in selected countries

Table 4 indicates that in the United States the most data about medical histories are taken by patients at first admission. In Sweden, all necessary information about past medical history of patient is also considered. Only surgeries performed are not seen in the medical records of elderly people. Also, in Iran and Japan, there are no childhood diseases, past surgeries and hospitalization as elements of medical records.

Minimum medical history data	Selected country			
	United States	Sweden	Japan	Iran
Past history	✓	✓	✓	✓
Childhood diseases	✓	✓	-	-
Hospitalization	✓	✓	-	-
Allergies	✓	✓	✓	✓
Drug use	✓	✓	✓	✓
Use of alcohol and drugs	✓	✓	✓	✓
Surgeries	✓	-	-	-

Table 4. The comparison of minimum medical history data for elderly health in selected countries

Table 5 shows minimum data for elderly health assessment. Findings of the table of minimum data for elderly health assessment are to some extent similar in four countries. All health assessment data has been mentioned in the United States. Only in three countries, Sweden, Japan and Iran, assessment of activity, rehabilitation and physical limitations as well as reproductive system assessment have not been considered.

Table 6 shows minimum financial data of elderly health. Findings indicate that in three countries of the United States, Sweden and Japan, there are all financial data elements related to elderly health. However, only insurance number and the use of complementary insurance have been considered in Iran.

#### 4. DISCUSSION AND CONCLUSION

The latest statistics show that in Iran elderly people constitute 5.7% of the population. In some provinces of the country, the elderly population even constitutes about 9 percent of the total population of the province. In Iran the elderly popula-

Minimum data for health assessment	Selected country			
	United States	Sweden	Japan	Iran
Blood pressure	✓	✓	✓	✓
The risk of cardiovascular disease	✓	✓	✓	✓
Assessment of skin	✓	✓	✓	-
Assessment of bowel and bladder	✓	✓	✓	-
Nutrition	✓	✓	✓	✓
Diabetes	✓	✓	✓	✓
Vision and Hearing	✓	✓	✓	✓
Depression	✓	✓	✓	✓
Sleep	✓	✓	✓	✓
Osteoporosis	✓	✓	✓	✓
Incontinence	✓	✓	✓	✓
TB	✓	✓	✓	✓
Dementia	✓	✓	✓	✓
Fall and imbalance	-	-	-	✓
Immunization	✓	-	-	✓
Activities assessment	✓	-	-	-
Rehabilitation assessment	✓	-	-	-
Evaluation of physical limitations	✓	-	-	-
Genital	✓	-	-	-

Table 5. The comparison of health assessment minimum data for elderly health in selected countries

Minimum financial data	Selected country			
	United States	Sweden	Japan	Iran
The source of payment	✓	✓	✓	-
The identity of the payer	✓	✓	✓	-
Insurance	✓	✓	✓	-
Supplemental insurance	✓	✓	✓	-
Insurance documentation	✓	✓	✓	-
insurance number	✓	✓	✓	-
Social Security Number	✓	✓	✓	-

Table 6. The comparison of minimum financial data for elderly health in selected countries

tion is expected to reach about 20 percent of the country's population over the next four decades. However, statistics show Iran has less number of elderly people compared with the selected countries. However, its elderly population is increasing with the rapid growth. According to the latest statistics of the U.S. census bureau there are 35.9 million people aged over 65 years in the United States which they constitute 12 percent of the population. According to these statistics, in 2030 older people will double by 2000. This means that, the population will increase from 35 million to 72 million people (20 percent of America's population) (37). Also, In Sweden, which has one of the oldest populations in the world, more than 18 percent of the population aged 65 years and over (38). In addition, the population of those aged 65 years and over constitutes about 21 percent of the total population. Projections show that in 2025 the elderly people constitute 27.4 percent of the population of Japan (39, 40).

Findings from the current study showed the United States, compared with other three countries, has the largest demographic data elements when providing services to the elderly people. But in other three countries, some demographic data such as occupation, language, religion, address of elderly person and address of person accompanying patient as well as

habits have not been considered. Also, minimum data set of medical history showed that in the United States given that information is taken in physician's office at the first admission, the most data related to medical history is taken from patients. In Sweden, all necessary information about past medical history of patient is also considered. Only surgeries performed are not elements of the medical records of elderly people. In the meanwhile, in Iran and Japan, childhood diseases, past surgeries and hospitalization within related forms are not considered (41, 42, 43-94).

Findings of the minimum data for elderly health assessment indicate that elderly assessment is to some extent similar in four countries. Only in three countries, Sweden, Japan and Iran, assessment of activity, rehabilitation and physical limitations as well as reproductive system assessment have not been considered (50-52). To interpret these findings, it can be said that in these three countries the less assessment data than the United States is considered because elderly people visit primary care centers (39-41, 45-48, 53, 54).

The minimum financial data of elderly health showed that three countries of the United States, Sweden and Japan have considered all financial data elements related to elderly health (55). However, in Iran there are only insurance number and the use of complementary insurance (56-60). In Iran the Ministry of Health and Medical Education is the main steward of the population health and takes initiatives in the field of elderly health due to its responsibility for protecting the health of the nation. With the establishment of the Department for the Elderly in the Deputy of health of the Ministry of Health in Iran, the elderly health issue has been considered more than ever. It should be mentioned that the extraction of statistics of elderly people from the office of the Ministry of Health is hardly performed, because in the related centers, elderly people are admitted and discharged like other individuals of the society and their information are not gathered separately or within especial forms. However, it should be mentioned that many elderly people visit physicians' offices for receiving health services and information of these individuals in Iran is kept only in offices. This issue will be solved through the launch of a widespread electronic health record or family physician program. Since, in Iran all documentation process of elderly data is performed manually and also, based on the conducted studies, many data does not meet the need of health managers and decision-makers, so it can be suggested that using the results of this study as well as a poll of experts, a minimum data set for elderly health be designed for Iran.

**CONFLICT OF INTEREST: NONE DECLARED.**

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